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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/653,970	09/01/2000	Kyosuke Taka	55090(904)	5673

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EXAMINER	
NGUYEN, MADELEINE ANH VINH	
ART UNIT	**PAPER NUMBER**
2626	

DATE MAILED: 02/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/653,970	TAKA ET AL.	
	Examiner	Art Unit	
	Madeleine AV Nguyen	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 September 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) *9-11 and 18-28* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5-8,12,13 and 15-17* is/are rejected.

7)☒ Claim(s) *4 and 14* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *01 September 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This communication is responsive to response to action requiring election/restriction filed on September 27, 2004.

Election/Restrictions

1. Applicant's election without traverse of group I (claims 1-8, 12-15, 16-17) in the reply filed on September 27, 2004 is acknowledged.

2. Claims 9-11, 18-28 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to nonelected groups, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on September 27, 2004.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1- 3, 5-8, 12-13, 15, 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukushima (US Patent No. 6,115,561).

Concerning claim 1, Fukushima discloses an image forming apparatus (Figs.1-2) comprising an image forming section (212, Fig.2B) for forming a pattern chart having a plurality of gradation patterns which are adjacent to each other in a sub-scanning direction of image

formation (Figs.7-8); an image reading section (A, Fig.1) for reading image information from the pattern chart; and an image processing section (108, Fig.1) for adjusting an image forming condition based on the image information.

Fukushima does not directly teach that the gradation patterns are aligned thereon so as to suppress an uneven concentration appearing depending upon a scale of an electrostatic potential difference on the gradation patterns. However, Fukushima teaches in Fig.3 the first density gradation control (S101-S104) for maximum-density correction control by appropriately setting the contrast potential from the obtained density information (S103-S104). The relative photosensitive-drum surface potential is the difference between the developing bias potential and the surface potential of the photosensitive drum after a latent image has been formed (col. 6, lines 41-61). Thus the contrast potential is used when providing the test print 1 where the difference between each of the surface potentials of photosensitive drums 121, 131, 141, 151 and the developing bias potential. Fukushima further teaches a second gradation control which is adjusted based on the result of the first density gradation control (col. 5, lines 55-63). The second density gradation control (S105-S107) is for gradation correction control by using of test print 2 (Fig.8) so as to correct the concentration of the toner. In other words, in this control, a test pattern is formed and the concentration of the developer is controlled wherein the concentration of the developer is depend on the contrast potential. Thus, the contrast potential is equivalent to a scale of an electrostatic potential difference as claimed since it is the difference between the surface potential of photosensitive drums and the developing bias potential and the concentration correction due to uneven concentration is depended on the contrast potential. It would have been obvious to one skilled in the art at the time the invention was made to consider

Fukushima teaches that the gradation patterns (test print 2 in Fig.8) is aligned so as to suppress an uneven concentration (difference concentration of the developer 44 detected from the toner-concentration sensor 677) appearing depending upon a scale of an electrostatic potential difference on the gradation patterns (a contrast potential for providing an appropriate gradation characteristic for the gradation patterns) since Fukushima teaches that the test print 2 (a pattern chart) having a plurality of gradation patterns (Fig.8) is generated for controlling the uneven concentration of the developer as claimed (col. 6, lines 41-61; col. 8, lines 25-60; col. 9, lines 5-15; col. 10, lines 7-42; col. 12, line 66 – col. 13, line 26; col. 13, line 53 – col. 14, line 12; col. 14, line 59 – col. 15, line 15).

Concerning claims 2-3, 5-8, 13, 15, Fukushima further teaches that the plurality of the gradation patterns have concentrations arrange in a staggered configuration (Fig.8, col. 8, lines 25-51); the gradation patterns are adjacent to each other in the sub-scanning direction are brought into contact with each other (Fig.8; col. 8, lines 25-51); a main-scanning direction is perpendicular to the sub-scanning direction, and the gradation patterns with closest concentrations are aligned in the main scanning direction; the gradation patterns are aligned in increasing order of concentration; the image are processed with reference to a color of a base of the pattern chart and the image processing section adjusts an image forming condition based on the processed image information (Fig.8; col. 8, lines 25-51); the reading section performs a readout reducing operation so as to obtain a base concentration (col. 10, lines 14-42).

Concerning claim 12, Fukushima discloses an image forming apparatus (Figs.1-2) comprising an image forming means (B, Fig.1) for forming an image on a recording member by forming an electrostatic latent image on a light sensitive element based on first image

information (test print 1); image formation input means (212, Fig.2B) for inputting second image information (test print 2) obtained based on the image formed on the recording member; image processing means (108, Fig.1) which processes the second image information and adjusts an image forming conditions when the image is a pattern chart (Fig.8) having different gradation patterns aligned thereon, wherein the gradation patterns are adjacent to each other in a sub-scanning direction of the image forming means (Fig.8; col. 8, lines 25-51).

Fukushima does not directly teach that the pattern chart is formed so as to prevent an intensified electric field caused by a potential difference at a boundary of an electrostatic latent image. The same discussion is repeated as in claim 1 above.

Claim 16, Fukushima discloses the image forming apparatus as discussed in claim 1 above. Fukushima does not directly teach that the image processing means adjusts an image forming condition with reference to a base color of the recording member having the pattern chart formed. However, Fukushima teaches that "controlling the concentration of the tone of the developer to a target value and correcting the target value of the toner concentration depending on the density of the reference patch image on the photosensitive drum using the second density/gradation control". Thus, the toner concentration (image forming condition) is adjusted with reference to a base color of the recording member (Y, M, C, K) having the pattern chart. It would have been obvious to one skilled in the art at the time the invention was made to consider the toner concentration in Fukushima is the image forming condition with reference to a base color of the recording member since the image processing means adjusts the toner concentration having the pattern chart formed (Fig.8).

Concerning claim 17, Fukushima further teaches that the change in the quantity of light emitted to the pattern chart (S203-S204, Fig.11; col. 10, line 66 – col. 11, line 30).

Allowable Subject Matter

5. Claims 4, 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an Examiner's Statement of Reasons for Allowance: Claims 4, 14 are objected over the prior art of record because the Examiner found neither prior art cited in its entirety, nor based on the prior art, found any motivation to combine any of the said prior art which teaches an image forming apparatus as claimed in claims 1, 12 above wherein the image forming section forms a dummy pattern which is adjacent to the gradation pattern at an end in the sub-scanning direction on the pattern chart and which is equal or close to the end gradation pattern in concentration.

Any comments considered necessary by applicant must be submitted no later than the payment of the Issue Fee and, to avoid processing delays, should preferably accompany the Issue Fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

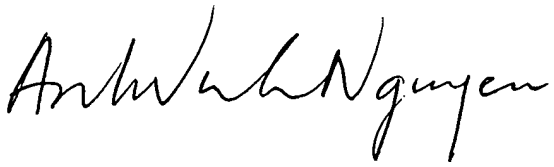
a. Kato et al (US Patent No. 6,505,909) discloses a test pattern printing method to forms a patch by forming adjacent positions for teach of the test area and for reference are composed of a predetermined single color within a color reproducible range.

b. Fukui et al (US Patent No. 5,206,686) teaches an apparatus for forming an image with use of electro-photographic process including gradation correction.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Madeleine AV Nguyen whose telephone number is 703 305-4860. The examiner can normally be reached on 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly A Williams can be reached on 703 305-4863. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Madeleine AV Nguyen
Primary Examiner
Art Unit 2626

February 10, 2005